The SAFE FOOD Book Your Kitchen Guide

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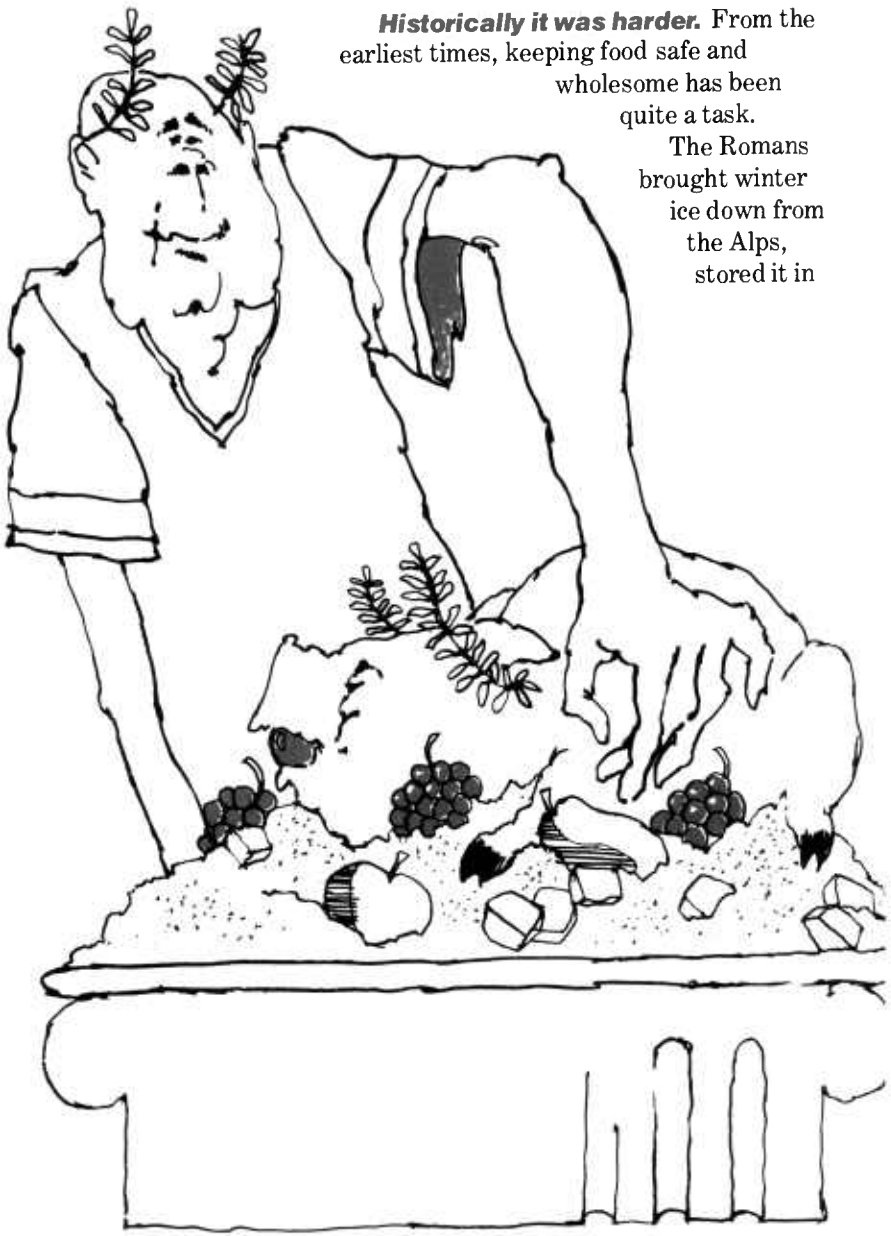


Historically it was harder. From the earliest times, keeping food safe and wholesome has been quite a task. The Romans brought winter ice down from the Alps, stored it in

caves, and used it the next summer to keep food from spoiling and—perhaps equally important to them—cool the wine!

There's a recorded reference that sauerkraut, because it is preserved to keep a long time, was used by camp cooks for the workmen on the Great Wall of China. That was about 200 B.C.

And in the Middle Ages, a great many smoking, salting, drying, and preserving techniques were perfected that are still in use. The luxurious fruitcake, studded with dried fruits and steeped in rum or brandy, is a present-day descendant. The liquor retards mold, and there are cases of well-tinned and brandied cakes lasting 20 years!

Taking care of food today. Now, of course, modern refrigeration and cooking make keeping food safe much simpler.

Government inspection and strict standards within the food industry make a decisive difference too. Today Americans enjoy the safest, most wholesome, and most abundant food supply in the world.

With respect to meat and poultry—the principal subject of this booklet—some 7,500 Federal inspectors oversee operations in 7,200 packing and processing plants every working day.

This is because the law requires that inspectors check and re-check the safety and quality of meat and poultry from the time the animals arrive at the packing plant until the final product is ready for sale.

This inspection costs only about $1.50 a year for each of us—a real bargain for such peace of mind!

Once you get food home, though, it's up to you to take proper care of it. This is important, because most of the roughly 2 million cases of food poisoning which now occur each year are due to improper handling of food in the home. But you don't have to be a statistic! Prevention is as easy as following the rules in this book.

How Food Spoils

It's important to know the difference between organisms that cause foods to spoil—to rot or turn bad—and those that can cause food poisoning.

A major difference is the temperatures the two types like. Most food poisoning bacteria like room temperatures (around 60° to 90°F). They don't grow at low refrigerator temperatures. By "grow" we mean that bacteria divide, multiplying in number.

But food spoilage organisms—like some bacteria, and yeasts, and molds—can grow at lower temperatures. Even when food is in the refrigerator at temperatures as low as 40°F, these spoilage agents can continue to reproduce.

While it's hard to be grateful for them, most food spoilage organisms at least make themselves known. The food looks or smells awful. That's a help—you know to throw it out.

The Food Poisoners

Unfortunately, the bacteria that commonly cause food poisoning— with its mild-to-severe intestinal flu-like symptoms—are not nearly so obvious.

Most of them can't be seen, smelled, or tasted. The smartest way to handle the food poisoners is to make life so hard they can't multiply enough to cause trouble.

But before we talk in detail about prevention, let's meet these troublemakers.

Staphylococcus aureus is the scientific name for a small, round organism that is a leading cause of food poisoning.

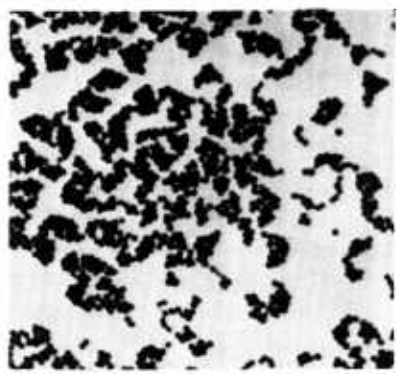
We literally carry staph with us all of the time. It lives in our noses and on our skin. You can find it in concentrated form in boils, pimples, and other skin infections.

When transmitted to food, usually by handling, staph starts growing. At warm temperatures—100°F is ideal—certain types of staph multiply rapidly and produce a toxin or poison that makes people sick.

Staph symptoms? Nausea, vomiting, and diarrhea usually appear 2 to 6 hours after eating staph-infected food, and last a day or two. The illness is usually not too serious in healthy people.

While cooking kills most bacteria, the staph toxin is not destroyed by ordinary cooking. So you must be very careful in handling food to prevent staph from growing enough to produce toxin.

Don't let prepared foods—particularly starchy foods, cooked and cured meats, cheese and meat salads—sit out at room temperature over 2 hours. Staph is often associated with these foods.

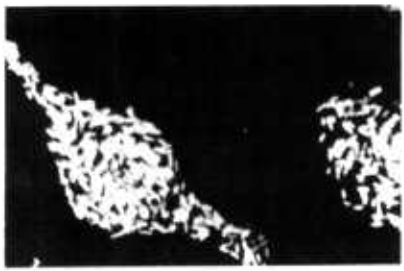


Staph—These tiny, grape-like cells produce a toxin that is the most common cause of food poisoning in this country.

Salmonella —which appears as short, thin rods under the microscope—is another major cause of food poisoning in this country.

Actually, salmonella is the name used for some 2,000 closely related bacteria that cause more severe flu-like symptoms than staph—diarrhea, vomiting, fever. Infants and young children, the ill, and the elderly may be seriously affected. Symptoms normally appear 12 to 36 hours after eating, and may last 2 to 7 days.

Salmonella continually cycles through the environment in the



Salmonella—Shown here as a cluster, these rod-shaped cells are the second major cause of food poisoning.

intestinal tracts of people and animals.

The bacteria is often found in raw or undercooked foods, such as poultry, eggs, and meat. Unpasteurized milk can also contain salmonella.

Control is a simple matter, though, because thorough cooking kills salmonella. (See cooking chart, p. 11, for safe cooking temperatures for various meats.)

Perfringens, full name *Clostridium perfringens*, ranks third as a cause of food poisoning. It, too, is present throughout the environment—in the soil, the intestines of animals and humans, and in sewage.

Perfringens differs from staph and salmonella, however, in two ways. First, it's anaerobic, which means it grows only where there is little or no oxygen. Second, it produces two kinds of cells.

The normal perfringens cell is the unpleasant one—it produces the poison which makes you sick. But perfringens has a spore cell too, which can survive circumstances that knock out the normal cells.

These spores are tricky, because at temperatures between 70° and 120°F, they can become normal cells again, multiplying quickly to disease-causing levels.

Perfringens shows its ugly side—usually diarrhea and gas pains—some 8 to 24 hours after consumption. While the symptoms often end within a day, people with certain medical conditions—ulcer patients, for instance—can be seriously affected.

Called the "cafeteria germ" because it often strikes food served in quantity and left for long periods on a steam table or at room temperature, perfringens is often found in cooked beef, turkey, gravy, dressing, stews, and casseroles.

Perfringens—Between 70° and 120°F, these cells can multiply rapidly. They are the third major cause of food poisoning.

Special attention to refrigeration, which keeps perfringens from growing, and dividing large portions into small dishes for serving are the best hedges against perfringens. Dividing buffet foods into several small dishes exposes more of the food to the air, thus reducing the anaerobic conditions perfringens likes.

Botulism, while very rare, is the deadly food poisoning caused by *Clostridium botulinum.* Although it needs just the right conditions to develop, botulism is clearly a danger because the spores are always around in soil and water.

Like perfringens, the botulinum bacteria—rod-shaped under the microscope—grow best in anaerobic (reduced oxygen) conditions. Since the canning process forces air out of food, the botulinum bacteria may find improperly canned foods a good place to grow.

Low-acid vegetables such as green beans, corn, beets, and peas, which may have picked up botulinum spores from the soil, are at risk. The risk is greater if they are home-canned, and safe canning procedures have not been followed precisely.

Botulinum bacteria—Right center, the rod-shaped normal cells which produce a rare but deadly poison. Left center, the oblong shapes with clear centers are the "enduring" spores.

Like the perfringens spore, the botulinum spore is tough. While high cooking temperatures will kill the normal botulinum cell, it takes still higher temperatures to kill the spore. That's why canning is done with a pressure canner. If the spores are not killed in the canning process, they can become normal cells again and produce the deadly poison.

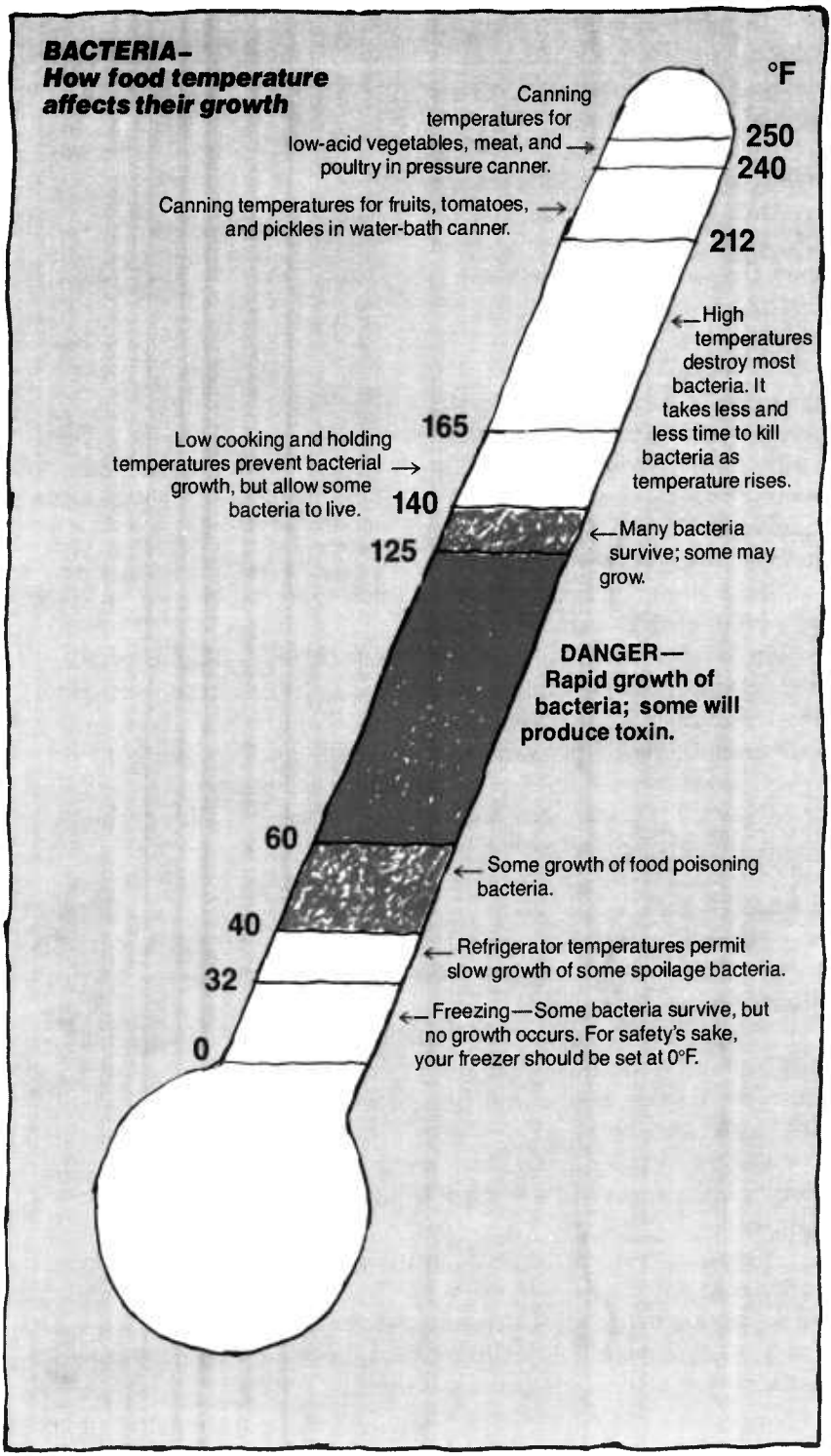
If you eat botulinum-contaminated food, symptoms will develop in 12 to 48 hours. The poison attacks the nervous system, causing double vision, droopy eyelids, trouble swallowing, and difficult breathing. Without treatment, a patient can die of suffocation—the nerves no longer stimulate breathing.

There is an antitoxin, which has reduced the number of deaths from botulism, but patients may still suffer nerve damage, and recovery is often slow.

To avoid botulism, carefully examine any canned food, especially home-canned food, which looks suspicious. Danger signs are milky liquids (that should be clear) surrounding vegetables, cracked jars, loose lids, and swollen cans or lids.

Don't use canned goods showing any of these signs. *Don't even taste them!* Even a very small amount of botulinum toxin can be highly dangerous.

Throw suspect canned goods away, carefully. You don't want animals, children, or anyone else who might rummage through the trash to get ill. Wrap the cans in plastic, then in heavy paper bags, for deposit in a secure trash can. (See page 27, "Reporting Food Illness," on when to call health authorities in cases of suspected botulism.)


BACTERIA–
How food temperature affects their growth
°F
Canning temperatures for low-acid vegetables, meat, and poultry in pressure canner.
250
240
Canning temperatures for fruits, tomatoes, and pickles in water-bath canner.
212
High temperatures destroy most bacteria. It takes less and less time to kill bacteria as temperature rises.
165
Low cooking and holding temperatures prevent bacterial growth, but allow some bacteria to live.
140
Many bacteria survive; some may grow.
125
DANGER—
Rapid growth of bacteria; some will produce toxin.
60
Some growth of food poisoning bacteria.
40
Refrigerator temperatures permit slow growth of some spoilage bacteria.
32
Freezing—Some bacteria survive, but no growth occurs. For safety's sake, your freezer should be set at 0°F.
0

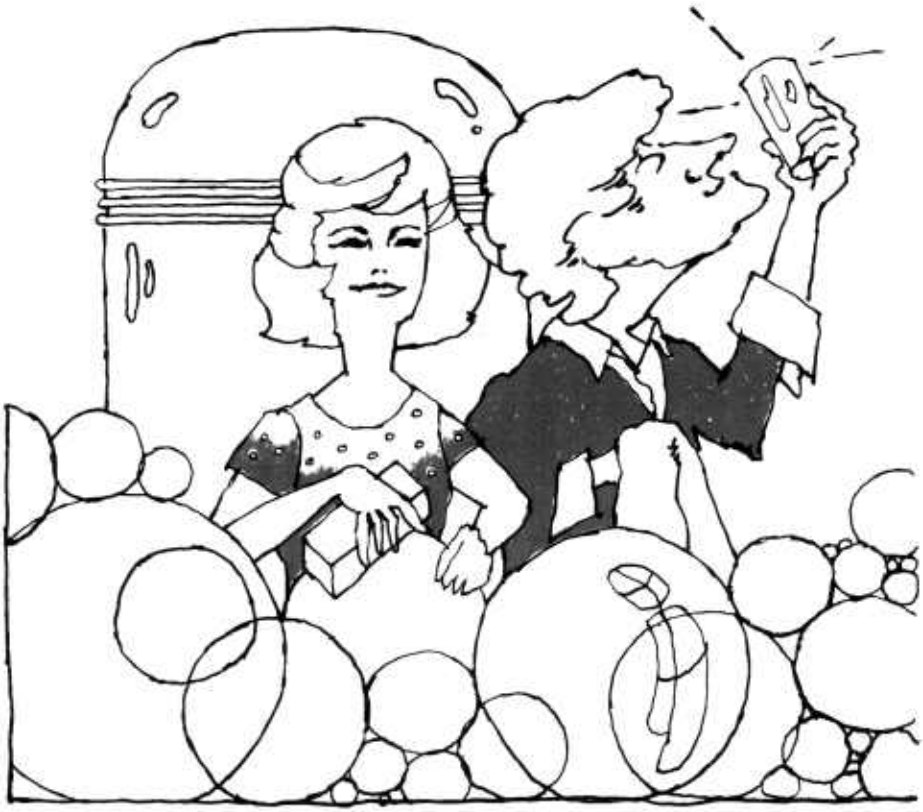
A Safe Kitchen

Staph, salmonella, perfringens, and the botulinum bacteria are the four main food poisoners. But there are twenty or so other organisms that can cause problems too.

So, to get food on the table safely, you need to know and follow the rules for food care.

Most of the food poisoners can be controlled by cooking and refrigeration, so the first two food rules are to keep food HOT or COLD.

And since most bacteria get into food through careless handling, the third rule is to keep everything in the kitchen CLEAN.

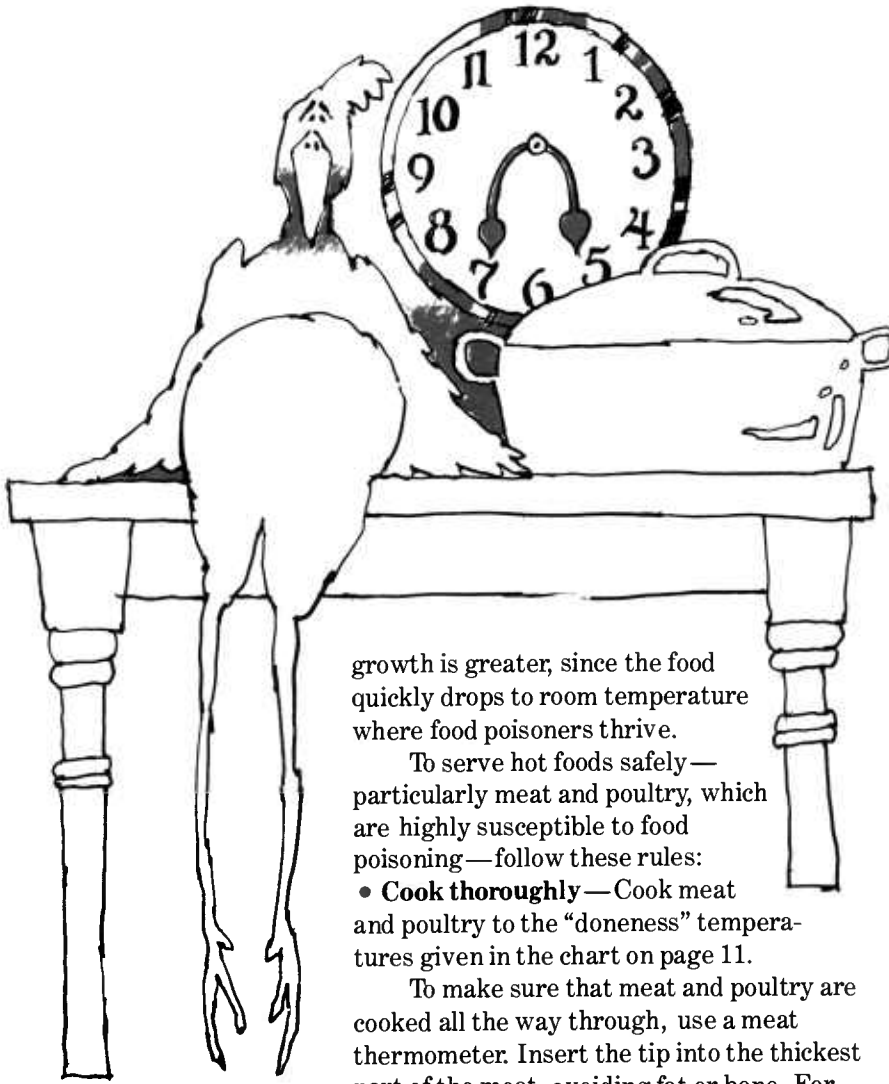


Keep Food Hot

High food temperatures (165° to 212°F) reached in boiling, baking, frying, and roasting kill most food poisoning bacteria.

If you want to delay serving cooked food, though, you have to keep it at a holding temperature—roughly 140° to 165°F. Steam tables and chafing dishes are designed to maintain holding temperatures. But they don't always keep food hot enough. So it's not wise to leave hot food out more than 2 hours.

When cooked food is left out unheated, the possibility of bacterial



growth is greater, since the food quickly drops to room temperature where food poisoners thrive.

To serve hot foods safely—particularly meat and poultry, which are highly susceptible to food poisoning—follow these rules:

• **Cook thoroughly**—Cook meat and poultry to the "doneness" temperatures given in the chart on page 11.

To make sure that meat and poultry are cooked all the way through, use a meat thermometer. Insert the tip into the thickest part of the meat, avoiding fat or bone. For poultry, insert the tip into the thick part of the thigh next to the body.

• **Don't interrupt cooking**—Cook meat and poultry completely at one time. Partial cooking may encourage bacterial growth before cooking is complete.

• **Cooking frozen food**—Allow frozen food more time to cook—generally 1½ times the period required for food that has been thawed.

• **Thoroughly reheat leftovers**—Cover leftovers to reheat. This retains moisture and guarantees that food will heat all the way through. Bring gravies to a rolling boil before serving.

• NEVER LEAVE FOOD OUT OVER 2 HOURS!

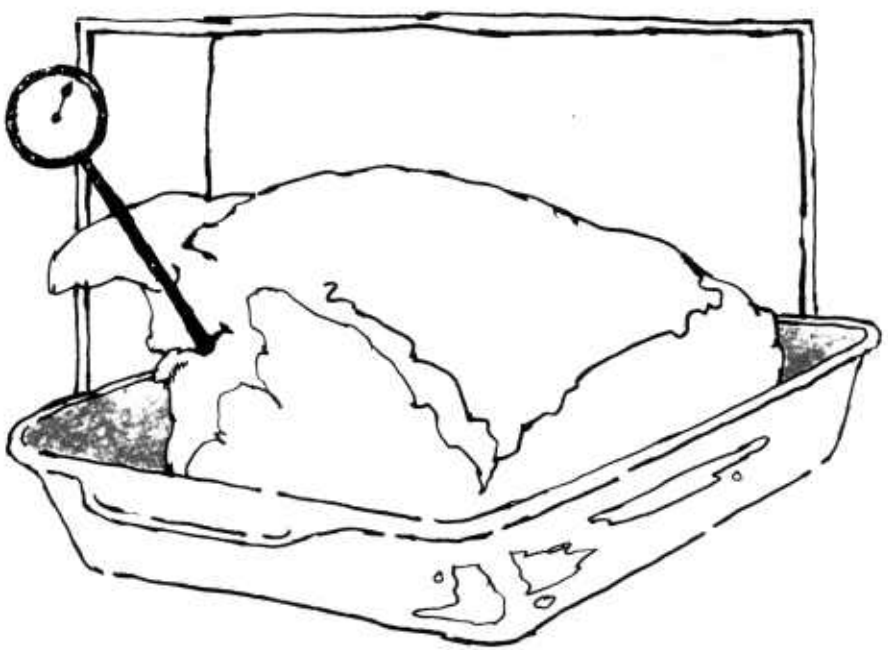
Cooking Meat & Poultry

Meat and poultry cooked throughout to these temperatures are generally safe to eat. For microwave cooking, see special instructions, page 16.

	Celsius	Fahrenheit
FRESH BEEF		
Rare	60	140*
Medium	71	160
Well Done	77	170
Ground Beef	77	170
FRESH VEAL	77	170
FRESH LAMB		
Medium	77	170
Well Done	82	180
FRESH PORK	77	170
POULTRY		
Chicken	82-85	180-185
Turkey	82-85	180-185
Boneless Turkey Roasts	77-80	170-175
Stuffing (Inside or outside the bird)	74	165

CURED PORK		
Ham, Raw (Cook before eating)	77	170
Ham, Fully cooked (Heat before serving)	60	140
Shoulder (Cook before eating)	77	170
GAME		
Deer	71-77	160-170
Rabbit	82-85	180-185
Duck	82-85	180-185
Goose	82-85	180-185

* Rare beef is popular, but you should know that cooking it to only 140°F means some food poisoning organisms may survive.



Keep Food Cold

The colder food is kept, the less chance bacteria has to grow. In large part, that's why food keeps in the freezer so much longer than in the refrigerator.

To make sure your refrigerator and freezer are giving you good protection against bacterial growth, check them with an appliance thermometer.

The refrigerator should register 40°F (5°Celsius) or lower. The freezer should read 0°F (−18° Celsius) or lower.

Here are some tips for keeping meat, poultry, eggs, milk, cheese, and other perishable foods cold:

- **Shopping**—Pick up the perishables as your last stop in the grocery, and—especially in hot weather—get them home and into the refrigerator quickly. Don't leave them in the car while you run other errands. If you live more than 30 miles from the store, consider using an ice chest for the trip home.
- **Refrigerating**—Since repeated handling can introduce bacteria to meat and poultry, leave products in the store wrap unless it's torn. In that case, to prevent moisture loss, re-wrap the product in wax paper, plastic wrap, or aluminum foil.

Read the labels on canned meat and poultry and refrigerate it if necessary. Otherwise, store it in a cool, dry place.

For more details on refrigerator and freezer storage times for meat and poultry, see the cold storage chart on page 14.

- **Freezing**—While "freezer burn"—white, dried-out patches on the surface of meat—won't make you sick, it does make meat tough and tasteless. To avoid it, wrap freezer items in heavy freezer paper, plastic wrap or aluminum foil. Place new items to the rear of the freezer, and old items to the front so that they'll be used first. Dating freezer packages also tells you what to use first.
- **Thawing**—The safest way to thaw meat and poultry is to take it out of the freezer and leave it overnight in the refrigerator. Normally, it will be ready to use the next day.

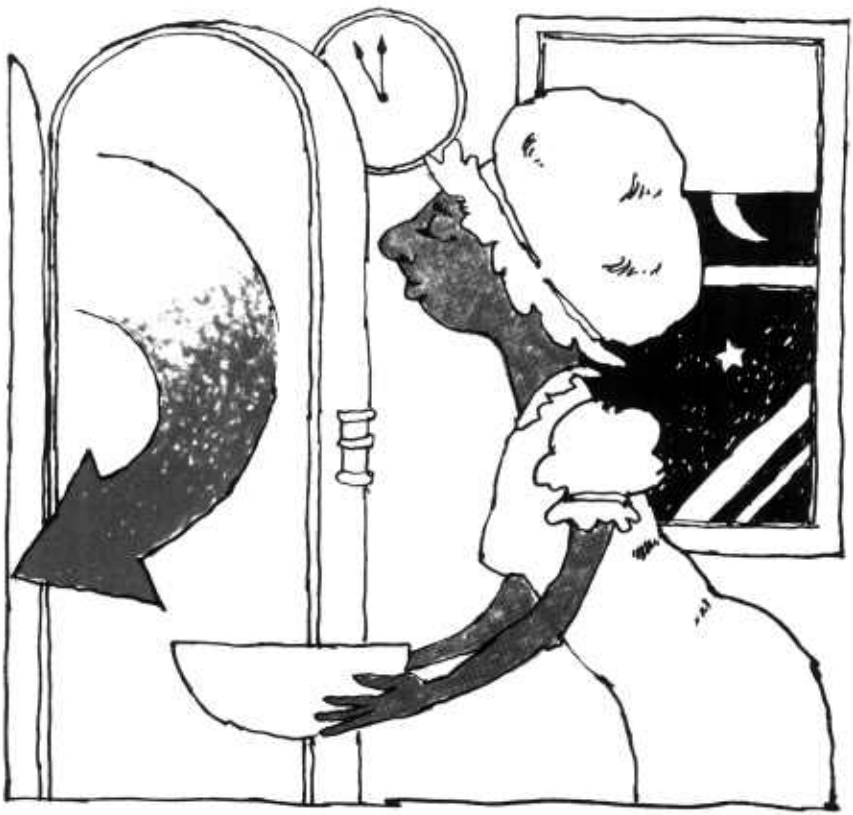
For faster thawing, put the frozen package in a watertight plastic bag under cold water. Change the water often. The cold water temperature slows bacteria that might grow in the outer, thawed portions of the meat while the inner areas are still thawing.

If you have a microwave oven, you can safely thaw meat and poultry in it. Follow the manufacturer's directions.

Caution: It's not a good idea to thaw meat and poultry on the kitchen counter. Bacteria can multiply rapidly at room temperature.

• **Storing leftovers**—Don't cool leftovers on the kitchen counter. Put them straight into the refrigerator.

Divide large meat, macaroni, or potato salads and large bowls of mashed potatoes or dressing into smaller portions. Food in small portions cools more quickly to temperatures where bacteria quit growing.



Keep Food Safe and Clean

When you shop, be careful in your selection of perishable foods. Make sure frozen foods are solid and that refrigerated foods feel cold.

The "Sell by" and "Use by" dates now printed on many products can also be helpful in deciding whether food is still safe to buy, provided you know how to use them.

What do they mean? The "Sell by" date tells the grocer—and you, the consumer—how long the product should be kept for sale on the shelf. The "Use by" date is intended to tell you how long the product will retain top eating quality after you buy it.

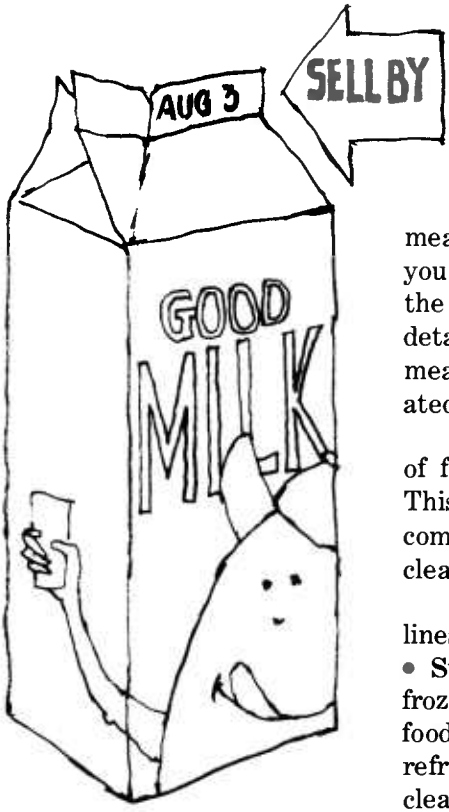
While these dates are helpful, you can't rely on them absolutely. They

Cold Storage of Meat and Poultry

TIME LIMITS? Because you can't tell exactly how long meat and poultry will last when you get them home, this chart gives short, conservative storage times. You may be used to keeping food longer, but following the chart will help protect you from food spoilage—what you risk with long refrigeration—and from taste loss—what happens when food is left too long in the freezer.

Product	Refrigerator (Days at 40°F)	Freezer (Months at 0°F)
FRESH MEATS		
Roasts (beef)	3 to 5	6 to 12
Roasts (lamb)	3 to 5	6 to 9
Roasts (pork, veal)	3 to 5	4 to 8
Steaks (beef)	3 to 5	6 to 12
Chops (lamb)	3 to 5	6 to 9
Chops (pork)	3 to 5	3 to 4
Hamburger, ground and stew meats	1 to 2	3 to 4
Variety meats (tongue, brain, kidneys, liver, and heart)	1 to 2	3 to 4
Sausage (pork)	1 to 2	1 to 2
COOKED MEATS		
Cooked meat and meat dishes	3 to 4	2 to 3
Gravy and meat broth	1 to 2	2 to 3
PROCESSED MEATS (Frozen, cured meat loses quality rapidly and should be used as soon as possible.)		
Bacon	7	1
Frankfurters	7*	1 to 2
Ham (whole)	7	1 to 2
Ham (half)	3 to 5	1 to 2
Ham (slices)	3 to 4	1 to 2
Luncheon meats	3 to 5*	1 to 2
Sausage (smoked)	7	1 to 2
Sausage (dry, semi-dry)	14 to 21	1 to 2
FRESH POULTRY		
Chicken and turkey (whole)	1 to 2	12
Chicken pieces	1 to 2	9
Turkey pieces	1 to 2	6
Duck and goose (whole)	1 to 2	6
Giblets	1 to 2	3 to 4
COOKED POULTRY		
Covered with broth, gravy	1 to 2	6
Pieces not in broth or gravy	3 to 4	1
Cooked poultry dishes	3 to 4	4 to 6
Fried chicken	3 to 4	4
GAME		
Deer	3 to 5	6 to 12
Rabbit	1 to 2	12
Duck and goose (whole, wild)	1 to 2	6

* Once a vacuum-sealed package is opened. Unopened vacuum-sealed packages can be stored in the refrigerator for 2 weeks.



don't reflect a number of things that can shorten a food's useful life, such as too much handling by store employees and customers, or inadequate refrigeration.

Therefore it's best not to store fresh meat on the refrigerator shelf unless you plan to use it in a day or two. (See the cold storage chart on page 14 for full details on how long different types of meat and poultry can safely be refrigerated and frozen.)

The final concern in the home care of food, of course, is keeping food clean. This means that EVERYTHING that comes into contact with food should be clean!

Here are some storage and cleanliness guides:

- **Store foods in safe places**—Store frozen foods in the freezer, perishable food to be used within a few days in the refrigerator, and canned foods in a clean, dry place.

Keep pets, household cleaners, and other chemicals away from food. Don't store food near leaky pipes or seeping moisture. Control household pests (rats, mice, roaches).

- **Don't spread infection**—Always wash your hands before beginning food preparation. Teach this simple, but vital, rule to your children too.

Use gloves to handle food if you have any kind of skin cut or infection on your hands. Try not to sneeze or cough into food.

- **Keep washing and drying cloths clean**—Bacteria can "loiter" in towels and cloths you use over and over, so wash kitchen linen often. Throw out dirty or mildewed dish sponges.
- **Wash hands, countertops, and utensils in hot, soapy water between each step in food preparation**—Bacteria present on raw meat and poultry can get into other food if you're not careful to wash everything they've touched before exposing another food to the same surfaces and utensils. Starchy foods and those containing dairy products are particularly vulnerable.

Second, wash your hands, utensils, and food-contact surfaces between contact with raw meat or poultry and the same dish when cooked. For instance, if you use a serving dish to marinate raw chicken, wash the dish well before using it to take up that same chicken after it's cooked.

Microwave Cooking

More and more people have microwave ovens at home today, and it is a very different method of cooking. Let's look, then, at how microwave ovens work, and how that affects their use with perishable goods, particularly meat and poultry.

Microwaves are extra-short radio waves produced in the oven. The movement (friction) caused inside the food by these waves actually does the cooking. The air in the oven usually doesn't heat up very much.

The waves bounce around inside the oven, passing through the food repeatedly. This causes cooking to begin just below the food's surface. Full cooking is achieved as the heat starts to spread through the rest of the food.

While microwaving is quick, it does not always cook food evenly. Before new microwave owners master their ovens, they often find that some spots in a food will over cook, while others are still not thoroughly cooked.

To complete cooking of the whole food without over-cooking these high-heat spots, many microwave recipes call for a 10 to 15-minute standing time following power cooking. That allows cooking to continue after you take the food out of the oven as the heat spreads evenly throughout the food.

The safest way to use your microwave oven is to:

- **De-bone meat and cook it slowly at a lower temperature**—Bone, which is dense, shields the tissue around it. That may keep the shielded area from heating through. Remove large bones from meat before microwaving, and cook the deboned portion using the middle-temperature range settings. Slower cooking at lower temperatures ensures more even heating. Rotating meat several times during cooking helps too.
- **Carefully observe the cookbook standing time**—Where full cooking is vital to kill disease-causing agents in meat and poultry, let the food stand outside the oven—preferably covered with foil to retain heat—for the full number of minutes recommended to complete cooking.
- **Test for doneness with a meat thermometer**—After the standing time, check meat or poultry in several spots to be sure it has reached the proper internal temperature throughout (see cooking chart on page 11).
- **DO NOT use the microwave for HOME CANNING**—As liquid inside the sealed glass jar heats and expands, pressure can build up, causing the jar to explode. Cases have been reported where the explosion blew the oven door off.

Special Care for Special Foods

Because they are especially vulnerable to food poisoning bacteria, some foods require special care.

Hamburger

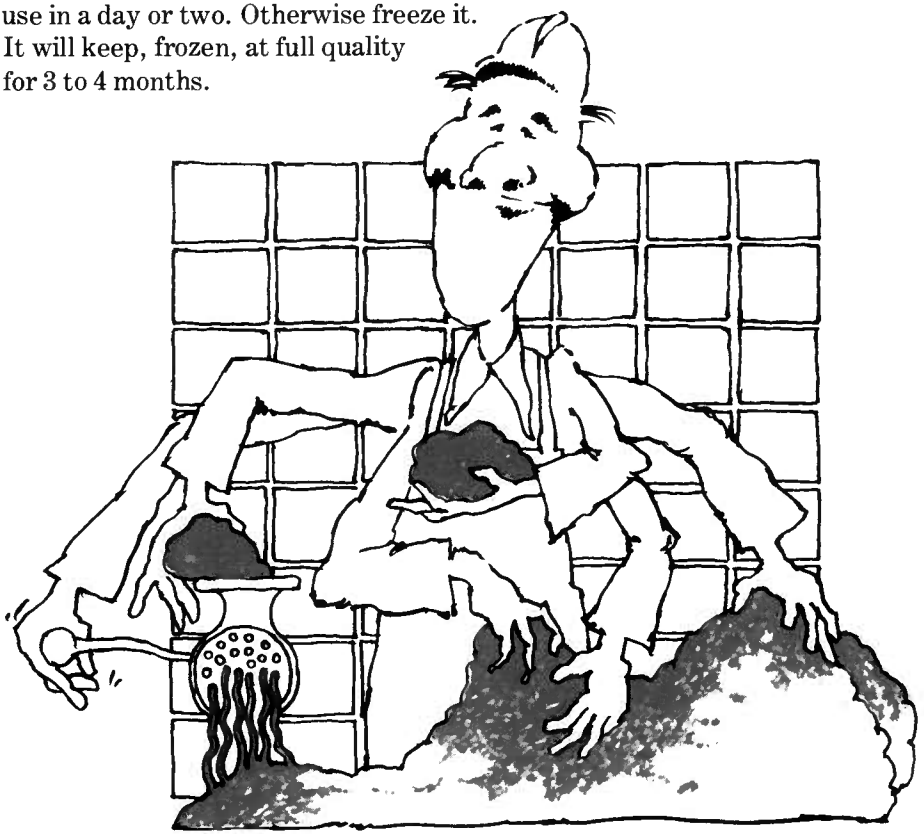
Hamburger receives more handling than many other meats. The beef is butchered and then ground. Trimmings from more expensive cuts and small amounts of fat may be added to the mixture for moisture and flavor. Hamburger is thus exposed to many of the common food poisoners, including salmonella and staph.

So hamburger can give you trouble if you eat it raw or rare. For complete safety, make sure hamburger is **brown or at least brownish pink in the center** before you serve it.

Making a meatloaf? Use a meat thermometer to make sure it cooks to 170°F. This is particularly important if your mixture contains pork.

Many people have questions about buying and storing hamburger. Generally, hamburger at the store should be a bright red to dullish brown color. **Return any package that has an off-odor when opened.**

You can store hamburger in the coldest part of the refrigerator for use in a day or two. Otherwise freeze it. It will keep, frozen, at full quality for 3 to 4 months.

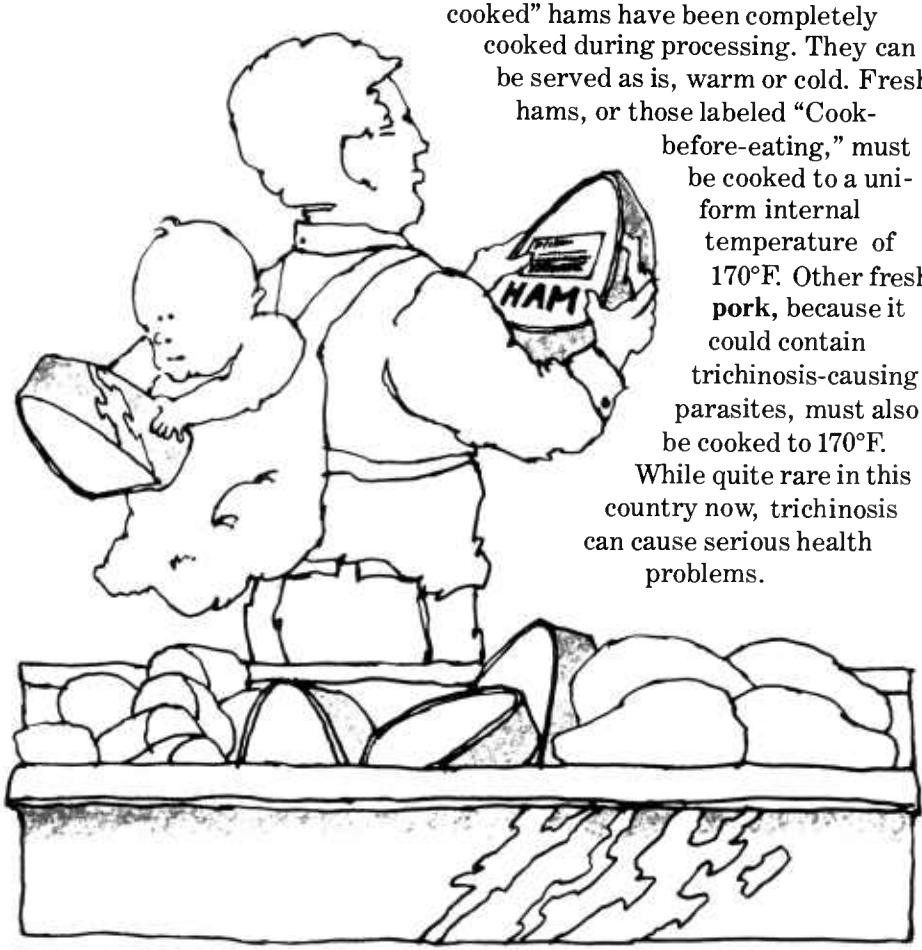


Ham & Pork

Because ham is cured—and often smoked, aged, and dried—you may think it is "protected" against food poisoning. It isn't always. Ham, like all pork, can spread food poisoning bacteria—chiefly staph and salmonella.

The thing to remember with ham is to read the label carefully. Know exactly what kind of ham you've bought, then observe these guidelines:

- **Refrigeration**—Ham slices or whole hams bought in paper or plastic wrap should be stored in the coldest part of the refrigerator. Ham slices should be used in 3-4 days; a whole ham within a week. Even most canned hams should be refrigerated. Read the label for storage time.
- **Freezing**—Freezing ham is tricky. Like other smoked pork products, ham tends to lose flavor and texture in the freezer. To freeze, wrap ham tightly in freezer paper or use special plastic freezer bags. Don't try to keep it frozen over a month or two.
- **Cooking**—It is important to read the label before serving ham. "Fully cooked" hams have been completely cooked during processing. They can be served as is, warm or cold. Fresh hams, or those labeled "Cook-before-eating," must be cooked to a uniform internal temperature of 170°F. Other fresh **pork,** because it could contain trichinosis-causing parasites, must also be cooked to 170°F. While quite rare in this country now, trichinosis can cause serious health problems.



Turkey, Chicken, and Duck with Stuffing

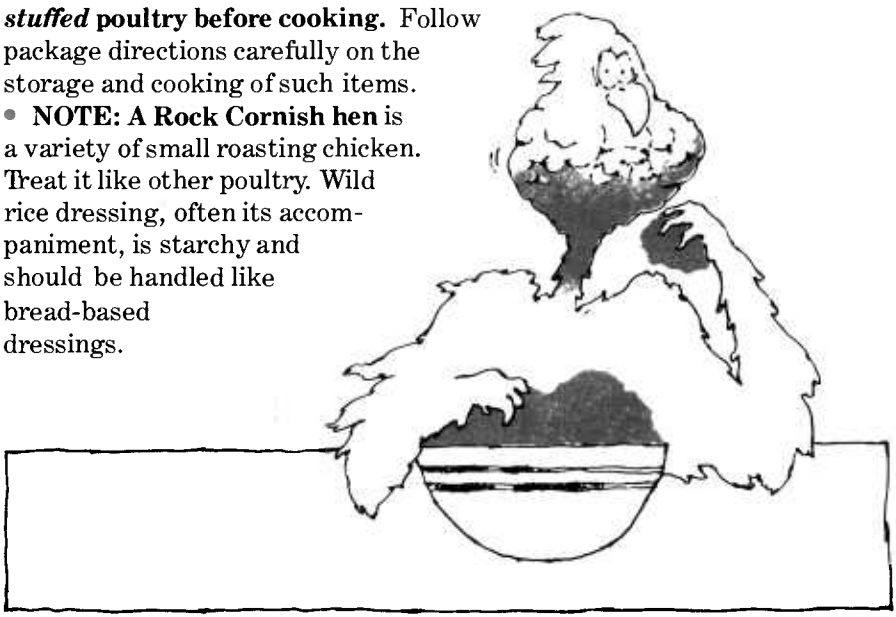
Fixing poultry with stuffing gives food poisoning several opportunities to strike. Bacteria present in raw poultry can get into the stuffing. The stuffing, deep inside the bird, may not heat thoroughly to bacteria-killing temperatures. And refrigerating stuffed poultry requires special attention.

Here are some poultry and stuffing safety tips:

- **Preparing ahead**—If you mix your stuffing a day ahead, pre-mix only the dry ingredients and refrigerate them separately from the uncooked bird. That will keep any bacteria in the raw poultry from entering the starchy dressing, a food many bacteria can grow well in.
- **Cooking**—Stuff the bird just before you're ready to cook it, and stuff loosely. That gives heat from the oven a better chance to cook the stuffing all the way through.

Check the stuffing for doneness with a meat thermometer after you take the bird out of the oven. Leave the thermometer in place for about 5 minutes for an accurate reading. To be fully cooked, the stuffing should reach 165°F and the bird 185°F.

- **Serving**—Place the stuffing in a separate bowl for serving. Keep the poultry meat and stuffing separate for refrigeration, too.
- **Refrigerating**—If you don't want to debone the bird right away after your meal, refrigerate the carcass. You can debone later, dividing the meat into smaller portions for storage. Likewise, if you have large amounts of leftover stuffing, divide it into smaller dishes too. This speeds cooling.
- **Do not thaw commercially frozen *stuffed* poultry before cooking.** Follow package directions carefully on the storage and cooking of such items.
- **NOTE: A Rock Cornish hen** is a variety of small roasting chicken. Treat it like other poultry. Wild rice dressing, often its accompaniment, is starchy and should be handled like bread-based dressings.



Hotdogs and Lunch Meat

Hotdogs and lunch meats are processed to last longer than many other meat and poultry products. But if you keep them too long, you can have problems, mainly with spoilage.

Here are some storage hints:

- **Refrigerate**—Hotdogs and lunch meats will keep in the original vacuum-sealed package for 2 weeks. Once you open the package, though, you should re-wrap it well and plan to use the rest in 3-5 days.
- **Watch quality**—For best flavor, use hotdogs no later than 1 week after the "Sell by" date on the package—that's the date that tells store managers how long they should keep an item for sale.

And watch the liquid that often forms around hotdogs. If it's cloudy, it can be a sign that spoilage bacteria have started growing. Discard hot dogs in cloudy liquid.

- **Freezing?** These products can be frozen, but flavor and texture loss may appear after a month or so.

Eggs & Egg-Rich Foods

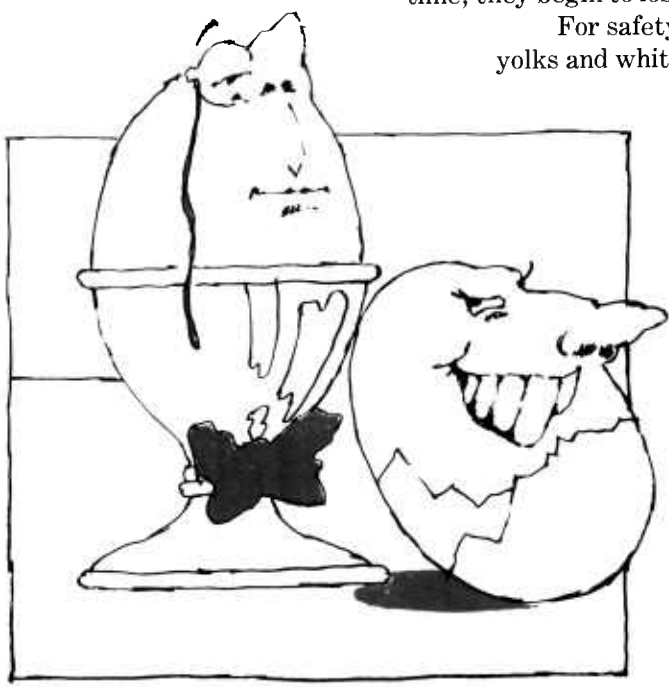
To turn an old phrase, there are good eggs and bad eggs. Good eggs —in the bacterial sense—are clean and unbroken. Use these eggs any time they'll be eaten partially cooked or raw. They should be used when you're fixing soft-cooked or poached eggs, soft scrambled eggs, a chef's salad dressing, custard, eggnog or ice cream.

Bad eggs—here we mean soiled or cracked—can contain harmful bacteria. They should be used only in recipes where they'll be fully cooked —hard-cooked eggs, cakes, casseroles.

More egg-tips:

- **Observe the HOT & COLD rules**—Egg-rich foods offer a good place for bacteria to grow, so serve them hot immediately after cooking and refrigerate them quickly after use. An egg-rich food to be served cold should be refrigerated right after preparation, and should be kept in the refrigerator until served.
- **Egg salad**—Wash your hands, all surfaces, and utensils carefully when preparing egg salad. Keep it cold between servings.
- **Hardboiled eggs**—Refrigerate hard-cooked eggs after preparation and use within a week. It's safe to have them outside an hour or two for an Easter egg hunt, for instance, but re-refrigerate those that are not eaten.
- **Be careful about refrigerator times**—For best quality, use whole eggs within the week of purchase. The outside limit for keeping whole eggs in the refrigerator is about 5 weeks. After that time, they begin to lose quality.

For safety's sake, leftover yolks and whites should be used in 2-4 days. To keep them from drying out, you can cover yolks with cold water for refrigeration.



Marinades

A marinade is a sauce used to flavor and tenderize meat and poultry. Marinades of all kinds are commercially available today, or you can make your own. Basically, a marinade consists of an acidic liquid (wine, lemon juice, or vinegar), spices and oil.

To use marinades safely:

- **Marinate in glass or plastic**—Marinades contain acid, and the process may take several hours, so you need a tray or bowl which won't be affected by acid. Avoid metal pans.
- **Marinate in the refrigerator**—While the acid in the sauce will slow bacterial growth, it won't stop it. So anything to be marinated over an hour or so should steep in the refrigerator.

Leftover meat in a marinade can be frozen, but the meat fats and oil from the marinade will separate, forming a solid fat layer on top. Don't be alarmed. The sauce will melt together again nicely when reheated.

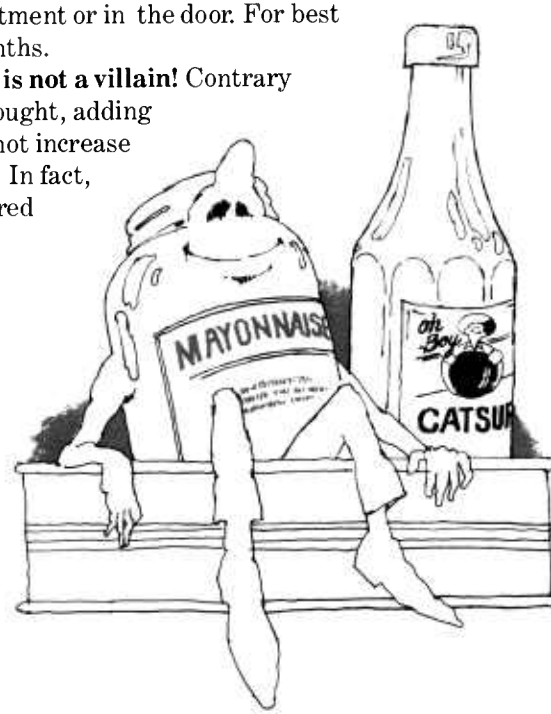
Mayonnaise

Don't ever try to freeze mayonnaise! A small disaster is what you get if you try to freeze a salad made with mayonnaise. This applies equally whether the other ingredients are meat, poultry, eggs, tuna, or macaroni.

While the other ingredients may freeze fine, the mayo, holding everything together, will separate. What you get when you try to defrost it, is an oily mess.

After opening, place mayonnaise, which keeps best at 50°F, in the warmest part of the refrigerator—on the shelves farthest from the freezing compartment or in the door. For best flavor, use it within 2 months.

A final word—**mayo is not a villain!** Contrary to what you may have thought, adding mayonnaise to food does not increase the risk of food poisoning. In fact, most commercially prepared mayonnaises and salad dressings contain lemon juice or some other acid flavoring, which slows bacterial growth. Salt in mayonnaise also retards bacterial growth. So, really, adding mayonnaise to food slightly increases its resistance to food poisoning.



Canned Goods

Canned foods—whether in tins or glass jars—will keep practically forever, right? Wrong.

Commercial canning is done under tightly controlled conditions—careful sanitation, just the right heat and timing—but there are still limits to how long it will preserve food.

Why? There are several factors that limit the shelf-life of canned foods. First, cans can rust over time. When rust is deep enough, tiny holes open in the can that may let spoilage agents in. Shipping accidents—where cans fall or are crushed—also cause container problems.

Then there's can corrosion. In all foods, but especially in high-acid foods like canned tomatoes, the food continually reacts chemically with the metal container. Over several years, this can cause taste and texture changes, and eventually lower the nutritional value of the food.

High temperatures (over 100°F) are harmful to canned goods too. The risk of spoilage jumps sharply as storage temperatures rise. In fact, canned goods designed for use in the tropics are specially manufactured.

And accidentally frozen canned goods left in a car or basement in subzero temperatures can present health problems. If the cans are merely swollen—and you're sure the swelling was caused by freezing—thoroughly cook the contents right away. You can eat or refreeze the cooked food. But if the seams have rusted or burst, throw the cans out.

While extremely rare, botulism (see page 7) is the worst problem you can encounter in canned goods. Never use food from containers giving out possible **botulism warnings**—leaking, bulging, or badly dented cans, cracked jars or jars with loose or bulging lids, canned food with a foul odor, or any container that spurts liquid when you open it. **Don't even taste such food!**

Seal the product in a plastic bag marked "Danger." To avoid leakage, sit it on a paper plate. Refrigerate it on a high shelf, out of the reach of children. A health official may want to examine it later. For full details on reporting suspect canned goods, see page 27, "Phoning in a Report."

To use canned foods wisely, follow these rules:

- **Store canned foods in a cool, clean dry place.** Temperatures below 85°F are best.
- **Canned Ham**—Store it in the refrigerator for use within 6-9 months.
- **Low-acid canned goods**—Store in the cabinet for 2-5 years. Products: Canned meat and poultry, stews, vegetable soups (except tomato), spaghetti (noodle & pasta) products, potatoes, corn, carrots, spinach, beans, beets, peas, pumpkin.

- **High-acid canned goods**—Store in the cabinet for 12-18 months. Products: Juices—tomato, orange, lemon, lime, and grapefruit; tomatoes; grapefruit; pineapple; apples and apple products; mixed fruit; peaches; pears; plums; all berries; pickles; sauerkraut; and foods treated with vinegar-based sauces or dressings, like German potato salad and sauerbraten.
- **Boil all home-canned foods before serving**—First bring the food to a rapid boil. This brings out any tell-tale botulinum odors. Some botulinum bacteria produce gas you can smell.

If the product smells all right, lower the heat and continue boiling the food, covered, for a second period: 10 minutes for high-acid foods, and 20 minutes for low-acid foods—meat and poultry products, peas, beans, and corn.

The second boiling kills any botulinum toxin that might be present even though you can't smell it.

Complete both boiling periods before tasting for quality or to add seasoning. But if a spoiled odor appears or the food is foaming or looks odd, throw it out without tasting.

What to Do When the Freezer Fails

Don't panic when your freezer fails. Freezers are well-insulated, and each package of frozen food acts as a "block of ice" protecting the food around it.

Ordinarily, a fully stocked freezer will keep food frozen for 2 days after losing power. A half-full freezer can maintain freezing power for roughly 1 day.

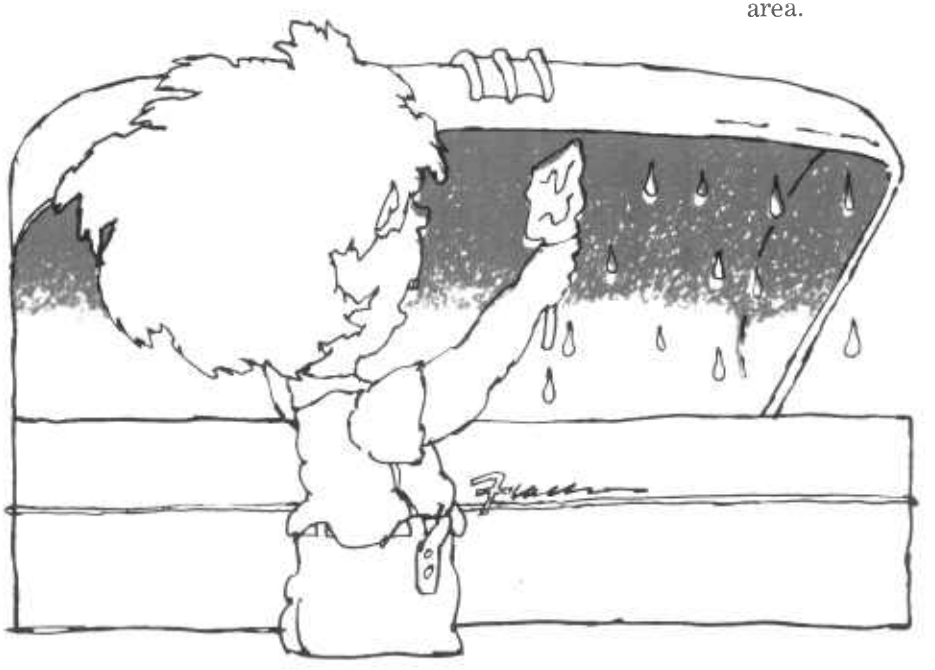
So, the first thing to find out is how long your freezer will be out. If it can be started again within a safe time, you don't need to do anything. Just resist the temptation to keep looking inside. Each time you open the door, warm air rushes in, reducing the freezer's effectiveness.

However, if it can't be re-started in a day or two, you may want to:

- **Divide your food up among friends' freezers.**
- **Find a store, church, or school freezer** that will temporarily accept your food, or, if possible, rent space in a commercial freezer or cold storage plant.
- **Put dry ice in your freezer.** Dry ice must be handled carefully. NEVER TOUCH IT WITH YOUR HANDS. It freezes everything it touches.

If possible, have the merchant put the dry ice in your picnic cooler or in a cardboard box. This makes handling it in the car easier.

If you must remove it from the carrying case when you get home, use heavy gloves or tongs. Work with dry ice in a well-ventilated area. As it evaporates, dry ice can quickly drive the oxygen you need to breathe out of a small area.



Place the dry ice on empty shelves in the freezer around the items to be kept frozen—not directly touching the packages themselves. You can also put a layer of cardboard over the freezer items and place the ice on top of the cardboard.

Twenty-five pounds of dry ice should hold a 10-cubic-foot full freezer below freezing for 3-4 days. If the freezer is half full, the same amount of ice will keep it stable for 2-3 days.

Judging your food *after* a freezer-thaw—Do not stick your head down into the freezer after its been full of dry ice for several hours. There may not be enough oxygen left for you to breathe. Open the freezer and let outside air mix in before examining your food.

Meat or poultry that still contains ice crystals may safely be refrozen. For meat and poultry products that have been kept in a refrigerator section, though, or have only managed to stay "cool-feeling," cooking is a better option. After you cook these items, you can refreeze them.

Throw out any product that has even a slightly unusual color or odor.

When the Refrigerator Fails

When power goes off in the refrigerator, you can normally expect your food to last at least 4 to 6 hours, depending on how warm your kitchen is. Higher room temperatures will mean it won't last as long.

You can add block ice to the refrigerator to keep it cool if there's a delay in getting the power back on. Dry ice can be added to the freezer compartment.

Reporting Food Illness

Despite your best efforts, you or your family could get food poisoning. Most such incidents occur at home. Others are caused by mistakes in large-scale food handling. You read about them in the paper when 20 or 30 people become ill after a large banquet, picnic, or reception.

If you think you have food poisoning, what should you do?

Treating symptoms

- **If you're only mildly ill,** treat the symptoms pretty much like "flu." Keep up your liquid intake with water, tea, apple juice, bouillon, and ginger ale to replace fluids lost through diarrhea or vomiting.
- **If symptoms are severe, or the victim is quite young, elderly, or has a chronic illness, see your doctor immediately or seek hospital care.**

Phoning in a report

- **There are three situations,** typically, in which you should notify your local health authorities: 1) you ate the suspect food at a large gathering; 2) the food is from a restaurant, delicatessen,

sidewalk vendor, or other commercial or institutional kitchen; or 3) the suspect food is a commercial product. Whatever the case, the deciding factor is whether other people have eaten the suspect food.

Try to have this information ready when you phone:

- Your name, address and daytime phone number.

- A brief explanation of the problem: Where did you eat the suspect food? How many other people ate it? Was it at a private or public gathering? When (date) did this occur?

- If you ate the food at a restaurant, what is the name and address? Date you ate there?

If the suspect food is a commercial product, have the container in hand so you can refer to it while you're on the phone.

- Try to remember when and where you bought the product. The name and location of the store is a great help.

- Look at the container itself. All products give the manufacturer's name and address.

- On meat and poultry products, look at the USDA inspection stamp for the official plant or establishment number. On red meat products, you'll see something like "EST. 38," and on poultry products "P-42." The number identifies the processing plant where the product was made.

- Many products also show a lot or batch number. This is a code indicating on what day and factory shift the item was produced. This information can be vital in tracing a problem to its roots.

After you've reported the incident, wrap the product in a plastic bag marked "Danger." Keep it refrigerated out of the reach of children. Health officials may want to examine it to see if a product recall—where the food is removed from stores and warehouses and consumers alerted to the danger—is necessary.

Index

For More Information

You Can Order this Book, plus	
1. **TALKING ABOUT TURKEY**—How to Buy, Store, Thaw, Stuff & Prepare Your Holiday Bird	Home & Garden Bulletin Number 243 July 1984
2. **MEAT & POULTRY LABELS WRAP IT UP**—With What You Need to Know	Home & Garden Bulletin Number 238 March 1984
Order these publications from:	FSIS—Publications Rm. 1163-S U. S. Dept. of Agriculture Washington, DC 20250
3. **LET'S COOK FISH**—Covers buying, storing & preparing seafood. ($2.75, Stock No. 003-020-00053-3.)	Order from: Supt. of Documents, GPO Washington, DC 20402

Or Call	
On fish—Preventing bacterial and parasitic diseases you can get from eating fish:	U.S. Dept. of Commerce—NOAA National Marine Fisheries Service 3300 Whitehaven Ave. Washington, DC 20235 202/634-7458
On food other than meat or poultry—safety, labeling & ingredients: Look for an FDA listing in your town,	or call the: FDA Office of Consumer Affairs HFE-88, 5600 Fishers Lane Rockville, Md. 20857 301/443-3170

On food handling, nutrition and storage questions:
Call the Cooperative Extension Service—listed in local phone books under county government or State university.

To Reach USDA's Meat & Poultry Hotline,
Call (202) 472-4485

Hotline staffers can answer your questions on the proper handling of meat and poultry, how to tell if it's safe to eat, and how to read meat and poultry labels.

You can also call the hotline to report problems with meat and poultry products—there are glass or metal fragments in it, or it looks or smells strange.

Follow this procedure: First, refrigerate a sample of the product—if possible, in its original container. Then tell the store where you bought it about the problem. NOW call the hotline. We'll tell you what you should do and whether health authorities should be notified.

The hotline is staffed from 8 a.m. to 4:30 p.m. (EST) weekdays. If you call after hours, an answering machine takes your name and number so someone can return your call.

Hearing-impaired persons with access to TDD equipment, can call the hotline on (202) 447-3333.

You can also write to: The Meat and Poultry Hotline
USDA-FSIS, Rm. 1163-S
Washington, DC 20250.

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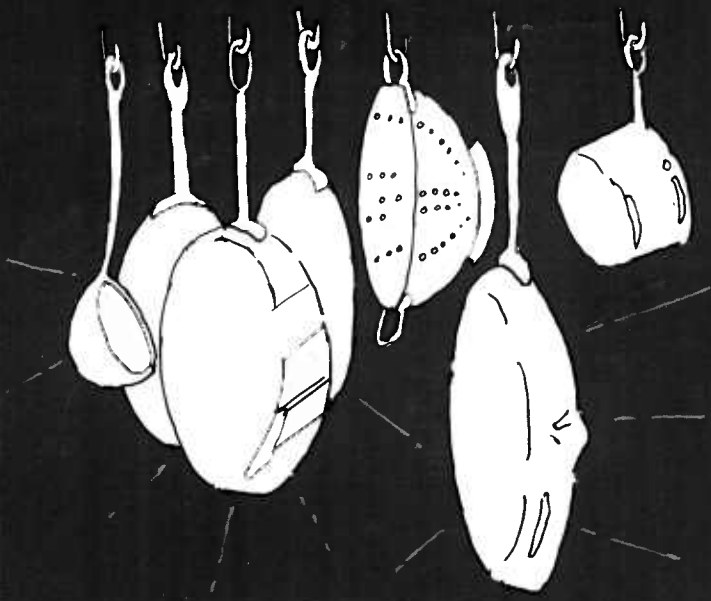
Quiz Answers:

Questions 1, 3 and 7 are TRUE, the rest are FALSE.

Why? For the reasons, see p. 3 for Question 1, p. 5 for 2, p. 8 for 3, p. 17 for 4, p. 23 for 5, pps.12 and 22 for 6, and p. 15 for 7. Question 8 is FALSE. Only an estimated 1 to 2 percent of individual cases of food poisoning are ever reported to health officials. Victims often just think they have the "flu." They may not call a doctor, or the doctor may not be able to tell exactly what they have—lab tests are often needed to diagnose food poisoning.



Test Your Food Safety IQ

	True	False
1. Some 2 million Americans are struck by food poisoning each year.	☐	☐
2. You can take a small taste to decide whether to use food that looks or smells strange.	☐	☐
3. Food poisoning bacteria multiply rapidly at ordinary room temperatures.	☐	☐
4. Hamburger is less likely to contain food poisoning bacteria than most fresh meat and poultry because the grinding destroys them.	☐	☐
5. You usually don't have to worry about canned goods. They keep almost indefinitely.	☐	☐
6. Because room temperature speeds things up, the kitchen counter is better than the refrigerator for thawing and marinating meat and poultry.	☐	☐
7. Your pets can bring food poisoning bacteria into the kitchen.	☐	☐
8. Because the public is so concerned, cases of food poisoning are usually reported to health authorities.	☐	☐

For the answers, see the inside back cover.